

ABSTRACT

A process for producing a semiconductor device, in which in the formation of a boron doped silicon film from, for example, monosilane and boron trichloride by vacuum CVD technique, there can be produced a film excelling in inter-batch homogeneity with respect to the growth rate and concentration of a dopant element, such as boron. The process includes the step of performing the first purge through conducting at least once of while a substrate after treatment is housed in a reaction furnace, vacuuming of the reaction furnace and inert gas supply thereto and the steps of performing the second purge through conducting at least once of after carrying of the substrate after treatment out of the reaction furnace, prior to carrying of a substrate to be next treated into the reaction furnace and while at least no product substrate is housed in the reaction furnace, vacuuming of the reaction furnace and inert gas supply thereto.